

ABSTRACT

A system and method for storing header information in parallel with corresponding frames of data, wherein the frames of data are stored in a first-in-first-out buffer and wherein the header information is accessed to make routing decisions for the frames of data while avoiding having to read the frames out of the buffer. In one embodiment, this buffer system is implemented in a port of a network switch. Receive logic in the port stores frames of data in the storage elements of a FIFO buffer and concurrently snoops on the frame data to obtain header information. The header information is stored in a buffer separate from the FIFO that stores the frames. The header information can be read from the header buffer rather than the frame buffer. A routing decision for each frame can be made before a previous frame is completely read out of the frame FIFO, hence before the corresponding frame is ready to be transmitted. A timer may also be associated with each header in the header buffer so that it can be determined when frames are stale and must be discarded.